

REMARKS

The Examiner is thanked for the thorough examination of the present application. The Office Action, however, tentatively rejected all claims. Specifically, the Office Action rejected all claims 1-9 under 35 U.S.C. § 102, as allegedly anticipated by U.S. published application 2002/0168468 to Chou et al. In response, Applicant has amended the claimed and elected embodiments to clearly define over Chou. In this regard, and for simplicity, Applicant has canceled claims 1-9, and added new claims 31-37. It will be recognized that, like previously-elected claim 1, independent claim 31 also embodies the steps of "providing ..." "depositing ..." and "subjecting..." Therefore, the amendment and new claims are not contradictory to Applicant's previous election. Furthermore, support for added claim 31 can be found at least on pages 5 of the application. Specifically, the feature "the TiN layer is subsequently treated with a plasma that includes a reactive gas consisting essentially of pure nitrogen" can be found at least on page 5, lines 2-3. Accordingly, Applicant submits that no new matter has been added by this amendment.

Newly Added Claims

Claims 31-37 are newly added and patently define over the cited art.

In this regard, new claim 31 recites:

31. A method for processing a TiN layer on a substrate, comprising:
providing a substrate;
depositing a TiN layer with a halogen containing titanium source gas and a nitrogen source gas on said substrate in a first process chamber; and
subjecting the TiN layer to a plasma treatment involving a reactive gas consisting essentially of pure nitrogen.

(Emphasis Added)

It is clear that the method for processing a TiN layer in claim 1 comprises subjecting the TiN layer to a plasma treatment involving a gas consisting essentially of pure nitrogen. In other words, the TiN layer is treated by plasma involving a nitrogen gas *without adding the hydrogen-containing plasma therein*.

In contrast, "Chou" teaches that the titanium nitride (TiN) layer is plasma treated using the hydrogen-containing plasma. Therefore, it is clear that Chou does not disclose the TiN layer is subjected to a plasma treatment involving a gas consisting essentially of pure nitrogen, as recited in claim 31. Therefore, Applicant respectfully submits that the cited art, as cited by the Examiner, does not teach or reasonably suggest at least the features/limitation emphasized above in claim 31. Applicant, therefore, submits that independent claim 31 clearly and distinctly defines over such prior art.


For at least this reason, the application has been placed in condition of allowance, and such action is respectfully requested. Hence it is respectfully asserted that newly added claim 31 be allowed over the cited reference (Chou et al). Insofar as claims 32-37 depend from added claim 31, these claims are also allowable at least by virtue of their dependency.

CONCLUSION

Applicants respectfully request submit that the foregoing is fully responsive to the election request and that all presently-pending claims be allowed to issue. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone the undersigned.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,



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